REVIEW OF NON-FERROUS METALS IN 1973

Amalgamated Metal Corporation

AMALGAMATED METAL CORPORATION LIMITED

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NOTE

Due to the record price increases and the interest aroused by the currency effects on price levels, the graphs in this Report are designed to supersede the Annual Price Chart which for this year, at least, will not be published.

contents

introduction

The metal industry now finds itself in a disturbed situation, due to events totally outside its control. With oil shortages and inflation threatening to bring the strong upsurge in economic growth to a rapid end, the outlook for 1974 is considerably less encouraging than it was just six months ago.

This review looks back on 1973 which must be an exceptional year by any standards and attempts to explain the causes of the record rise in metal prices. As 1972 ended metal prices which had begun to firm over the previous few weeks moved ahead, and the high stock levels which had been built up began to fall. The rapid improvement in the world economic situation was by far the main factor in the subsequent price rises, though supply problems effecting the aluminium, zinc and copper industries gave a strong twist to the upward movement.

In common with other commodities, metals rose rapidly in price throughout the year. Some causes of the situation are easily identifiable. We shall discuss below the most important factors, and try to look to the future to see how the energy situation will affect prospects for 1974.

Economic background

From the outset it is clear that the oil situation will adversely affect production and consumption of metal as of other materials. Therefore any forecast of economic activity in the metals industry will be no more meaningful than the assumption about oil supplies and price on which it is based.

As a group, the industrialised nations expanded more quickly in 1973 than at any time since the Korean War, at about 7 per cent. Certain individual countries performed better than they had done at any time in the last 25 years. Britain was one such country and during the first quarter of the year, the economy grew at about 10 per cent per annum though this fell to around 5 per cent by the last quarter. This, however, was accompanied by a record level of inflation, common to all industrialised nations and which led to severe credit restrictions being imposed by most governments during the year. The U.S. economy continued strongly through the year, and the widely forecast slow-down in the second quarter did not materialise to the extent expected. Indeed, the U.S. appeared to improve its position as the year progressed and the devaluation of the dollar and the high level of agricultural exports, helped the improvement in the balance of payments and latterly the improvement in the dollar against other currencies. The U.S. economy being less reliant on imported oil than other major industrialised nations, is well placed to achieve a positive rate of growth in 1974, though its potential export performance could be lessened by a decline in the economies of its major trading partners.

In 1973 Japanese and German growth rates and export performances recovered from the relatively depressed levels of 1971 and 1972. The German export performance continued to strengthen with the general economic recovery, but during the second half of the year, following tough credit restrictions, the economy began to show signs of severe strain and the weakening of the D.mark against the dollar and the increase in oil prices threatens the 1974 outlook. The Japanese recovery was based on a massive increase in the money supply and credit, and the high level of liquidity led to large-scale buying of commodities on world markets to such an extent that the trading houses were rebuked by the government for adding to inflation. Indeed much of the price rise in copper in the first three months is thought to have been due to buying from this source. However, towards the end of the year Japan's position looks particularly vulnerable given its very heavy dependence on Arab oil for industry and a possible drop in international trade.

The partial collapse of the world monetary system in the first half of the year and universally high interest rates encouraged the holding of metals and other commodities as a short-term currency hedge.

The apparent lack of real progress towards a revised monetary system after months of discussion did nothing to aid stability, or towards the movement back into currencies. The subsequent floating of the French franc and the Spanish peseta in January 1974 further eroded confidence in currencies and only

increased fears of a series of competing devaluations, as countries tried to maintain their current account surpluses following the increase in oil prices.

Metal production was continually interrupted during the year with strikes in the Chilean copper mines in mid-year, and later in the transport industry. In Zambia, transport was a problem following the closure of the Rhodesian border causing the Zambian government to revert to other forms of transport. The cut-back in zinc capacity in the U.S. during 1971 and 1972 now began to be felt and domestic production was quite insufficient to meet an increased consumer demand. In aluminium electricity cutbacks were forced on the industry following a very mild winter in the U.S.; Japan and India also suffered from power shortages. In tin the year was marked by the closure of the Williams, Harvey smelter in the U.K. which resulted in a short-term annual production loss of about 14,000 tons of material.

The dramatic change in the oil supply situation dominated the last few weeks of the year and in the U.K. this was escalated by the industrial action taken by the coal miners and the railwaymen. Sterling's weakness helped maintain metal prices at high levels. The oil shortage dominated all other events and the uncertainty about the short and long-term effects caused the market to act in a nervous manner with very wide day-to-day fluctuations. This was evident from the very sharp price falls in all metals in December as the market tried to evaluate the relative effect of these events on production and consumption. The market however made up its mind that in the short-term at least, production could be seriously disrupted and therefore prices should remain high. In the long-term the inflationary effects of higher energy costs will introduce a new set of factors to an already confused equation.

Oil supplies and the metals industry

The oil crisis, which occurred with such suddenness during the last three months of the year will dominate the world economic situation through 1974 and beyond, and has inevitably cast a dark shadow over the metal industry. Whereas in the first few weeks it appeared that the oil producers were going to cut back steadily on their exports, it now appears that they are switching their policies to prices by raising these to very high levels, a price of $15 per barrel having been announced by Libya on New Year's Day, as opposed to an OPEC price of just over $11 set a few days earlier. There is nothing to suggest that this will be the upper level, and therefore any forecasts of economic activity, let alone growth, must take account of this. There is, however, an economic level to which prices can rise, and as the recent OECD Economic Outlook stressed, "oil prices must take account of demand elasticities which are probably low, and substitution elasticities of supply which may be significant in the medium run and very high in the long run". This means, that though demand may not fall significantly in the short-term because of the industrial structure and economic needs, in the long-term, research and development of alternative sources of oil or energy, which could replace the dependence on oil as the main energy source will be stepped up.

The impact on metals will vary according to whether oil supplies decrease by more than 15 per cent, return to near the September 1973 level, or whether prices rise much above $11 per barrel. A cut-back of more than 15 per cent would have a highly differentiated world-wide effect, for instance the U.S.A. and Canada would expect to be least affected by such a cut-back. Only 20 per cent of industry's energy requirement in the U.S. is oil-based and only 6 per cent of oil requirements come from the Middle East. At the other extreme Japan would be most seriously affected since oil provides almost two-thirds of Japanese industry's energy needs—the major proportion of which comes from the Arab producers. The equivalent U.K. figure is only 31 per cent; and 38 per cent for Germany. The Japanese economy, therefore, might be expected to suffer most from any cut-back and the effect of a serious decline in economic activity would reduce production and consequently metal consumption significantly in Japan; and given the country's position as the largest importer of metals, the effect on trade and the metal industry would be very severe.

Initial reaction to the oil crisis suggested that consumption would be more severely hit than production but subsequent analysis reveals serious problems for commodity producing countries. The major problem will be the higher prices which developing countries will have to pay for vital supplies of oil. Though comparatively little oil is used in the production of concentrates and metals, transport and power costs will rise and lower levels of supplies will cut the rate of development of their economies and subsequent investment in the metals industry. Given the supply problems which arose in 1973, a slowdown in the rate of expansion would have serious long-term implications. Of immediate concern is the effect the oil shortage on transport and the regular movement of metal from the producing to the consuming countries. Already certain remote countries have had difficulties in moving vitally needed raw materials and coupled with much higher freight rates the resultant contraction in world trade would also hit the producer.

A number of solutions to this problem have been put forward, many of them involving the use of the increased oil revenues to support the developing producer countries. First, these may include plans to set up a stockpile of metals financed by Arab governments, into which unsold metals would be placed. It is suggested that this would operate in order to keep world prices high and serve as an investment vehicle for the Arab oil producers. Second, an investment programme in the metal producing countries financed again by the Arabs involving increased smelting and refining operations and further integrated plants. Thirdly, the Arab governments themselves might invest in metal industries in their own countries. This would give them both the investment outlet for their money and control over their wealth, and this is in our opinion the most likely solution. Economic development has become their aim and Western governments are rushing to help them achieve it in return for oil. However, some developments along these lines have already been carried out. Bahrain has a large primary aluminium smelter and other states are known to be interested in similar ventures. Steel production is also a possibility. With their enormous oil and gas reserves the Middle East has become a more attractive area for non-ferrous metal semi-fabricating and refining during the last few years and this interest should continue to grow. Within a few years it could be a major refining area.

Even before the oil cutbacks, energy shortages were affecting the non-ferrous metal industry. In the U.S. the power shortage in the pacific north west states and natural gas shortages in the southern states reduced aluminium production by about 8 per cent (350,000 tons). Japan also suffered from shortages of electricity which has cut its aluminium production by nearly 10 per cent from the forecast levels and accounted for the high level of imports. The U.S. should recover within a few months from its power problems provided snow and rain levels are high during the winter, and their economy, being so independent of Middle East oil should be very well placed for recovery from any short-term cutbacks. Though, with the American automobile industry directly or indirectly affecting 20 per cent of the economy, the cutbacks in output which have taken place during the last quarter have had an immediate effect on metal consumption with evidence of this now apparent.

To make forecasts under such conditions would therefore be even more hazardous than usual and a sudden change in one factor would quickly alter the situation. We cannot even presume that oil supplies will return to normal within six months or that the price level will remain stable at $15. However, some factors are known which will have a bearing on individual metals, of these one of the most important is the negotiation for new labour contracts in America. In 1971 there was no strike before the copper contract was agreed but in 1968 a nine-month strike ensued. Consumers are expected to maintain stocks at high levels prior to June 30th the final date for agreement. The aluminium industry reached an agreement on February 1st.

During 1974 metal prices are likely to be dominated by the continued uncertain currency situation, by the flow of money from stock markets into metals by both individuals and institutions and by the possible investment of the huge Arab oil revenues in commodities. A slackening in demand from industrial users would certainly cause prices to ease but the big decline will only occur when a new monetary system is agreed by Western governments.

prices and floating exchange rates

L.M.E. 1973 Opening and Closing Price Levels

	Copper		Tin		Lead		Zinc		Silver	
	cash	3-months	cash	3-months	cash	3-months	cash	3-months	cash	3-months
									pence	
2nd January	450	461	1,608	1,621	131	132	160	165	86·8	88·8
31st December	872	838	2,730	2,510	245	248	600	565	139·8	144·5
High for year	1,135	913	3,175	2,935	328	296	935	822	141·4	145·7

By any measure the price increases of commodities in 1973 were spectacular, with copper, lead and zinc more than doubling their opening prices, well before the year-end. The primary causes of these increases were the improvement in the economic performances of the major developed economies which put severe pressure on the suppliers, the breakdown of the fixed exchange rate system for currencies, the decline in world stock markets, a series of production problems and strikes in producing countries which caused stock levels to slump, the Middle East War and latterly the oil cutbacks.

Prices which had been hardening in the last few weeks of 1972 continued in this manner in the first four weeks of the year, following some optimistic economic forecasts for the year and a sharp drop in stock levels, in particular L.M.E. copper stocks which moved into Japanese hands as merchant houses invested their surplus liquid assets. Prices in the first few days were the year's lows for copper, lead and zinc. The low for tin was reached on January 30th at £1,613, following G.S.A. stockpile release rumours.

February, March and early April price levels reacted to the breakdown in the currency exchange rate system and the subsequently patched up agreement which allowed the Dollar to float. By the end of February copper, tin, lead and zinc had reached £575, £1,757, £149 and £189 respectively; with further advances during the next six weeks prices of copper, tin and lead reached temporary highs at £646, £1,741 and £159 respectively in the first week of April. Zinc continued to rise on reports of a tightening in the supply position, and then moved within a £210–£325 price range for the next two months.

Following the steady rise of the previous three months, price levels came under some pressure during April and May from profit taking and a lack of consumer interest ahead of the holiday season, and even major supply set-backs such as the strike at the El-Teniente copper mines in Chile failed to lift the market. Tin prices softened following the return to a fixed rate of the Malaysian dollar and the threat of G.S.A. releases, while lead showed little movement in either direction.

The improvement in demand which had initially caused the price moves, helped to turn the copper contango into a small backwardation by mid-year and the worsening copper and zinc supply situations caused prices to move ahead rapidly during June and July. This was helped by a further deterioration in the currency situation in July which caused copper, tin, lead and zinc forward prices to reach new highs of £842, £2,042, £239 and £407 respectively, but profit-taking and a lack of consumer interest caused a downturn in the market before copper settled in the £750–£800 for most of August and September.

Tin prices throughout the summer months had reacted to the liquidation of the Williams, Harvey smelter in June which had initially pushed prices over £2,000, and latterly to the releases from the G.S.A. stockpile. Some of this metal, which had been very easily absorbed by the market, later found its way onto the L.M.E. and restrained the price rise.

Zinc prices remained strong throughout September with supply problems dominating the price, due to strikes in North America and a steady decline in stocks.

The Middle East war gave the market another push upwards in October, with the feature being the widening backwardations in copper and zinc resulting from the tightening cash position, and the removal from warrant of L.M.E. copper stocks for shipment to the Far East. By the end of November the copper and zinc backwardations had widened to £195 and £150 respectively while the three months quotations were £890 and £720.

In mid-November the committee of the L.M.E. stepped in to bring order to the zinc market by prohibiting the opening of new positions between mid-November and end-December.

The Arab oil embargo and supply cutbacks in December caused considerable confusion in the market and the subsequent movement was sharply downward with the backwardations in copper and zinc narrowing sharply and with forward prices down by between £100 and £200 for both metals. Trading for the remainder of the month was very erratic and highly nervous with wide price movements greeting each new announcement.

At the year end the prices of cash and three months copper and zinc were £872 and £838 for copper and £600 and £565 for zinc.

Tin prices in the last quarter had reacted to the same basic economic factors as copper, though the releases from the G.S.A. had tempered the pace of the increase. However, because of the high level of demand in November and December, particularly from the East, the price rose very quickly to £3,145 for cash and £2,935 for three months, before falling at year end to £2,510 for three months and £2,730 for cash.

Lead prices, having remained sluggish all year, took some strength from the other price increases and reached a peak of £296 at the beginning of December though subsequent profit taking and nervous economic conditions caused a fall, and the prices at year end were £248 for three months and £245 for cash.

Aluminium prices were not left behind by the L.M.E. price movement and indeed from May 1972 when the "free market" prices were at a low of £165 the price movement was steadily upward, taking the price for 99·7 per cent material up to about £420 per metric ton. The price movement was firmly based on the 14–18 per cent growth rate in consumption, the cutbacks in U.S. production due to the power shortage and the production problems in Japan, India, Bahrain, France and Rumania.

Free market prices reacted later in the year from the highest levels, following the uncertainty caused by the oil supply problems but remained very firmly based, with no evidence of an immediate drop in prices. The aluminium producer price was under severe pressure during the year, in the U.K. it rose from £230 to £250 and subsequently £272·50 while in the U.S. the Cost of Living Council acted to keep prices down, but eventually allowed the major producers an increase from 25 cents to 27·5 cents per pound. Meanwhile the Alcan international export published price had risen to 30 cents C.I.F. World Ports.

Floating exchange rates

The year was marked by the partial breakdown in the system of fixed exchange rate, and the adoption of floating rates by the U.K. and U.S.A.

The U.K. rate against competing countries moved down steadily for the first half of the year. The terms of trade moved against the U.K. and the balance of payments deficit rose to record levels. On the L.M.E. prices were adjusted upward to take this into account and current price levels contain a compensation element wholly due to sterling's devaluation. The U.S. dollar also began the year by devaluing sharply, but from mid-summer the dollar rate recovered due to the improved U.S. balance of payments position.

The price graphs of copper, lead and zinc illustrate the effects of floating exchange rates on the prices paid by buyers in Germany, the U.S. and Japan. Following the February crisis the dollar and sterling prices rose well ahead of the German and Japanese prices and this situation continued to the end of the year, though by December the differential had narrowed following the strengthening of the dollar and sterling. However, a German consumer with 3,475 D.M. at the beginning of the year could buy a ton of copper and at the end of the year would have needed just 5,300 D.M. to purchase a similar quantity, an increase of only 53 per cent, while the sterling price had risen by 82 per cent.

For those producer countries with strong currencies the situation was much more serious, since they did not reap the full benefit of higher U.S. dollar or sterling prices. Malaysia was one such country where due to the strength of the Malaysian dollar against the U.S. dollar and sterling the producers did not benefit from the steep tin price rise in the second half of the year. The L.M.E. tin price rise in the first six months is almost wholly due to currency changes since the supply/demand factors had not altered sufficiently to cause such a movement.

Aluminium production and consumption 1969 to 1973
Selected statistics. (000 m tons)

Production of bauxite	1969	1970	1971	1972	1973 preliminary
Australia	7,921	9,256	12,539	12,700	14,400
France	2,797	3,051	3,184	3,200	3,300
Greece	1,948	2,092	3,087	3,200	3,000
Guyana	4,306	4,417	4,234	4,200	3,700
Jamaica	10,498	12,106	12,732	12,700	12,800
Surinam	6,236	6,022	6,718	6,700	7,800
Other countries	12,672	13,820	13,792	14,000	14,200
	46,378	50,764	56,286	56,700	59,200
Sino-Soviet bloc	8,168	8,598	9,190	9,400	9,600
World production	54,546	59,362	65,476	66,100	68,800
Primary production					
Europe	1,863	2,014	2,294	2,500	2,700
Africa	160	165	191	232	240
America (excluding U.S.A.)	1,124	1,140	1,214	1,131	1,255
Asia	730	938	1,125	1,320	1,400
Australasia	126	206	246	294	325
	4,003	4,463	5,070	5,477	5,920
United States	3,441	3,607	3,561	3,740	4,200
Sino-Soviet bloc	2,020	2,143	2,253	2,290	2,400
World primary production	9,464	10,213	10,884	11,507	12,500
Secondary production	2,139	2,130	2,173	2,500	2,812
Consumption of primary aluminium					
Europe	2,407	2,582	2,504	2,783	3,340
Africa	60	69	75	100	110
America (excluding U.S.A.)	390	396	417	532	575
Asia	1,037	1,187	1,273	1,541	1,833
Australia	118	139	154	127	145
	4,012	4,373	4,423	5,083	6,003
United States	3,706	3,488	3,916	4,296	5,060
Sino-Soviet bloc	1,916	1,993	2,133	2,162	2,300
World consumption of primary aluminium	9,634	9,854	10,472	11,541	13,363

aluminium

Supply

The aluminium primary producing industry was faced with a 20 per cent increase in demand in 1973, a demand which in the short-term it was unable to meet. Following two devastating years during which capacity utilisation had fallen to 80 per cent in North America and about 70 per cent in Europe, producers hoped for a substantial recovery given the encouraging economic prospects for the year, and the working up to full capacity of the new smelters installed in 1971 and 1972.

The first major set-back occurred with the power shortages in the Pacific North-West States of Washington and Oregon, which together account for about 1·25 million tons of output or nearly 30 per cent of the U.S. total. A shortage of snow during the winter was the prime cause and resulted in a loss of about 350,000 tons during the year. This very serious situation was partially relieved by drawings during the year of over 700,000 tons from the U.S. stockpile—a rate which will deplete the stockpile by the end of 1975.

This was followed in June by a strike at the Nogueres smelter of Pechiney Ugine Kuhlmann, a strike which led to metal freezing in the pots and a subsequent complete or partial loss in output until year-end, a total of 50,000 tons, almost all destined for export markets. Alcan in Canada also suffered strike action by their own employees and indirectly by Canadian railmen: which cost the company about 25,000 tons during the third and fourth quarters. Other producers were having their problems also, in Japan pollution and power shortages caused cut-backs and later in the year further output was lost through breakdowns in plant and equipment. These reduced the forecast output by over 110,000 tons to just over 1 million tons, about 60 per cent of consumption, and put imports at over 400,000 tons. In Eastern Europe and Bahrain purity problems led to low quality material being produced in the second half of the year.

The total effect of the production problems was a utilisation rate of capacity, of just under 90 per cent, at least 5 per cent under that required. Total production was about 10·1 million tons compared with 9·2 million tons in 1972, while capacity at year-end was about 11·4 million tons. North American production, for the first time, exceeded 4 million tons, an increase of 12 per cent on the previous year though well under the capacity level. Europe also recorded an increase of more than 12 per cent to 2·74 million tons as a result of the improved operating levels and the stable operating conditions, particularly in Norway which recovered very quickly from the depressed 1971 and 1972 levels and overcame any disadvantage of being outside the E.E.C. Japanese production just rose to 1 million tons against a target of 1·14 million tons due to smelter breakdowns and pollution restrictions. Representatives of leading Japanese producers spent a great deal of time during the year in developing countries exploring the possibilities of new smelters to produce for the Japanese domestic market.

Consumption

The recovery in aluminium consumption which had begun in 1972 with an increase in consumption of 11 per cent increased rapidly in 1973 to record an almost 20 per cent rise to over 11·1 million tons. This high growth rate, higher even than the fastest rates in the sixties, was due principally to large increases in Japan and U.S.A., with only slightly lower rates in Europe. In Japan, total consumption grew by about 25 per cent to reach 1·5 million tons and this had to be accomplished by drawing heavily on stocks, and by record imports. During 1973 Japan increased its share of world consumption from 12·5 per cent (1972) to 14 per cent, only just below the figure for the whole of Western Europe, due to a high level of spending by consumers on buildings and consumer durables and packaging goods, e.g. food and drink. U.S. consumption also reached record levels of over 5 million tons (5·51 million short tons), about half the world total, following a very high level of activity in the construction industry, and record output in the transport industry, where developments with aluminium in automobiles gave hope of a major new end use in car engine blocks and body panels. Packaging also continued its high growth rate, though towards the year-end it ran into criticism from some environmental conscious states, and future growth rates may be curtailed unless more cans are recycled.

The total consumption of all the European countries is now about twice that of Japan, though the ratio is moving quickly in Japan's favour. The largest European consumer, Germany, used about 800,000 tons (881,000 short tons), 11 per cent up on the 1972 level. The best performance, however, was that of the U.K., which after stagnating for nearly four years, managed an increase of 18 per cent to 477,000 tons (525,650 short tons) due to better performances from the economy in general and packaging and construction in particular where high timber costs made aluminium a more attractive substitute product.

Stocks

The 1971–72 depression in consumption caused a great increase in producer and consumer stock levels, so that at the beginning of 1972 the excess over normal levels was about 300,000 tons. By the end of 1972 this had fallen to about 100,000 tons and total free world stocks were just over 3 million tons.

The combination of the low operating level, the power shortage in the U.S.A., and the very rapid increase in consumption during the first six months caused a sharp diminution in the remaining stocks. Producers then implemented their agreement to draw G.S.A. stocks but at a much higher rate than under the agreement and by mid-year two years' drawings had been taken up. Heavy drawings continued throughout the year, the final total was about 600,000 tons, leaving less than half the year's opening total in the stockpile. The disposal of a further 187,700 tons from the stockpile was authorised by the President in December and this left 400,000 tons for disposal. At current rates of disposal the total stockpile will have disappeared by mid-1974.

By year-end U.S. producer stocks are believed to have fallen to under 50,000 tons, less than half the figure at the beginning of the year, and the lowest level since 1969. Consumers on the other hand tried to replenish stocks through the first half of the year, but with consumption rising much more quickly stocks were difficult to maintain. By the end of the year stocks held by both producers and consumers were about 200,000 tons lower than what would be considered normal levels.

Outlook

The outlook for primary aluminium in 1974 and the following years is better than for some other metals with production not being seriously cut back by oil shortages or higher prices.

Primary aluminium production uses relatively small amounts of oil in the reduction process but much higher carbon and pitch prices will materially affect the production costs of primary material. A question mark, however, hangs over the supply of other types of energy, notably natural gas and hydro-electric power in North America. This has improved from the severe cutbacks of 1973, but it is likely to be mid-year 1974 before the primary producers can bring back on stream the 350,000 tons of capacity which was closed down in 1973.

Japanese production will continue to suffer from the 20 per cent cutback in power allocations announced at the end of the year and from pollution problems which helped keep 1973 production well under the target of 1·14 million tons.

In 1974, the interest of leading Japanese producers in developing smelter facilities in the Middle East and South America is likely to be stepped up. The Middle East will no longer be a cheap source of power but it will be abundant, and in the interests of the Arab governments to develop; South America offers vast hydro-electric power potential.

Consumption of primary material will be reduced should the transport and construction industries suffer from the effects of the oil price rise and cut backs. The construction industry in the U.S.A. had already turned down from 1972–73 peak levels and this will have a direct effect on aluminium consumption, likewise transport, notably the aircraft and car industries will be cut back during 1974. (In the car industry it is potential usage which will suffer since relatively small amounts were used in cars in 1973). Since these two end uses account for about 40 per cent of total consumption, just over 4·4 million tons, a 10 per cent cut back would account for 440,000 tons or say four average size smelters.

However, since consumption in 1974 was forecast recently at about 500,000 tons more than production, a decline of 5 per cent in total consumption would help to bring supply and demand into balance and should therefore not be so serious as the decline which occurred in 1970–71.

Free market prices of primary aluminium in 1974 have already come down from the peak achieved in 1973 but we would not expect them to suffer a sharp fall. Certainly nothing as great as the 1971–72 decline. We would look for a base level between £350–£375 per ton. Producer prices will be very resistant to any downward pressure due to the low return producers are receiving and increased production costs. Higher prices will be sought by North American producers in an effort to narrow the gap between the published producer price and the free market price.

Copper production and consumption 1969 to 1973
Selected statistics. (000 m tons)

Mine production	1969	1970	1971	1972	1973 preliminary
Australia	131	158	177	181	200
Canada	520	610	654	709	800
Chile	688	686	708	716	660
Japan	120	120	121	112	110
Peru	199	212	213	217	230
Philippines	131	163	197	214	230
South and South-West Africa	153	172	174	183	170
United States	1,401	1,560	1,391	1,510	1,600
Yugoslavia	91	98	107	124	140
Zaire	364	387	408	437	490
Zambia	720	684	651	718	710
Other countries	325	331	347	507	525
Free world	4,843	5,171	5,148	5,628	5,865
Sino-Soviet bloc	1,112	1,189	1,315	1,416	1,475
World total	5,955	6,360	6,463	7,044	7,340
Refinery production					
Europe	1,230	1,305	1,240	1,293	1,320
Africa	870	870	845	943	970
America (excluding U.S.A.)	950	1,050	1,040	1,065	1,050
Asia	660	740	750	847	940
Australasia	140	145	165	174	164
	3,850	4,110	4,040	4,322	4,444
United States	2,010	2,035	1,780	2,047	2,150
Sino-Soviet bloc	1,310	1,400	1,520	1,686	1,725
World production	7,170	7,545	7,340	8,055	8,319
of which secondary	1,101	1,158	916	934	900
Estimated refinery production of primary copper	6,069	6,387	6,424	7,121	7,419
Apparent Consumption of refined copper					
Europe	2,320	2,435	2,315	2,485	2,750
Africa	45	55	55	66	75
America (excluding U.S.A.)	400	395	400	459	500
Asia	880	905	910	1,062	1,265
Australasia	100	110	105	102	115
	3,745	3,900	3,785	4,174	4,705
United States	1,945	1,855	1,830	2,023	2,330
Sino-Soviet bloc	1,355	1,435	1,580	1,685	1,740
World apparent consumption	7,045	7,190	7,195	7,882	8,775
Apparent surplus	+125	+355	+145	+173	—456
Changes in U.S. stockpile	—7	0	—2	0	36
U.S. net imports:					
Crude	—212	—196	—116	—168	—148
Refined	76	—81	—22	8	—29
Free world net exports to Sino-Soviet bloc:					
Refined copper	77	60	69	—5	—130
Changes in L.M.E. stocks	0	+53	+68	+43	—146
L.M.E. average prices (£ per ton):					
Cash (wirebars)	611	587	444	428	726
3 months (wirebars)	594	586	453	436	697

copper

Supply

The copper industry began 1973 in near-balance. Though supply still exceeded consumption by a small amount, producers had only about 110,000 tons of copper in reserve.

The year began with Zambia experiencing transport difficulties due to the closure of the Rhodesian border, and the Zambian decision to revert to other routes and means of transport, a decision which appears to have been successful. Chile was contesting legal battles with Kennecott over rights to copper supplies following the nationalisation of the mines, and there began a series of strikes at the Chuquicamata mine. Throughout the first four months, strikes in Chile, Peru and Belgium restricted supplies, but the situation further deteriorated when miners at the huge El Teniente mine struck for a 99·8 per cent pay increase. Such was the effect on production that Chilean output in the first four months was about 20 per cent or 30,000 tons less than the target, while El Teniente lost 700 tons per day. The strike was resolved after 76 days.

June and July witnessed a series of *force majeures* on shipments during the third quarter from Chuquicamata (80 per cent of whose output comes to Europe), Nchanga, Noranda, Anaconda, Magma and Bor, varying from 20 per cent to 40 per cent. Throughout the remainder of the summer the Canadian rail strike seriously disrupted Canadian supplies leading to extensions of the cutbacks to the year-end from Noranda, Hudson's Bay and Cominco.

The supply situation became worse towards the year-end with Hudson's Bay, Kennecott, Asarco, Anaconda, Cities Services and the Peruvian industry experiencing further cutbacks in 1973 and early 1974 supplies due to industrial action.

On the political front the year witnessed the overthrow of the Allende government in Chile by the military junta. In Zambia the government set up a new marketing company in October to control copper and mineral sales, and on the last day of the year the Peruvian government nationalised the U.S.-owned Cerro de Pasco Corporation.

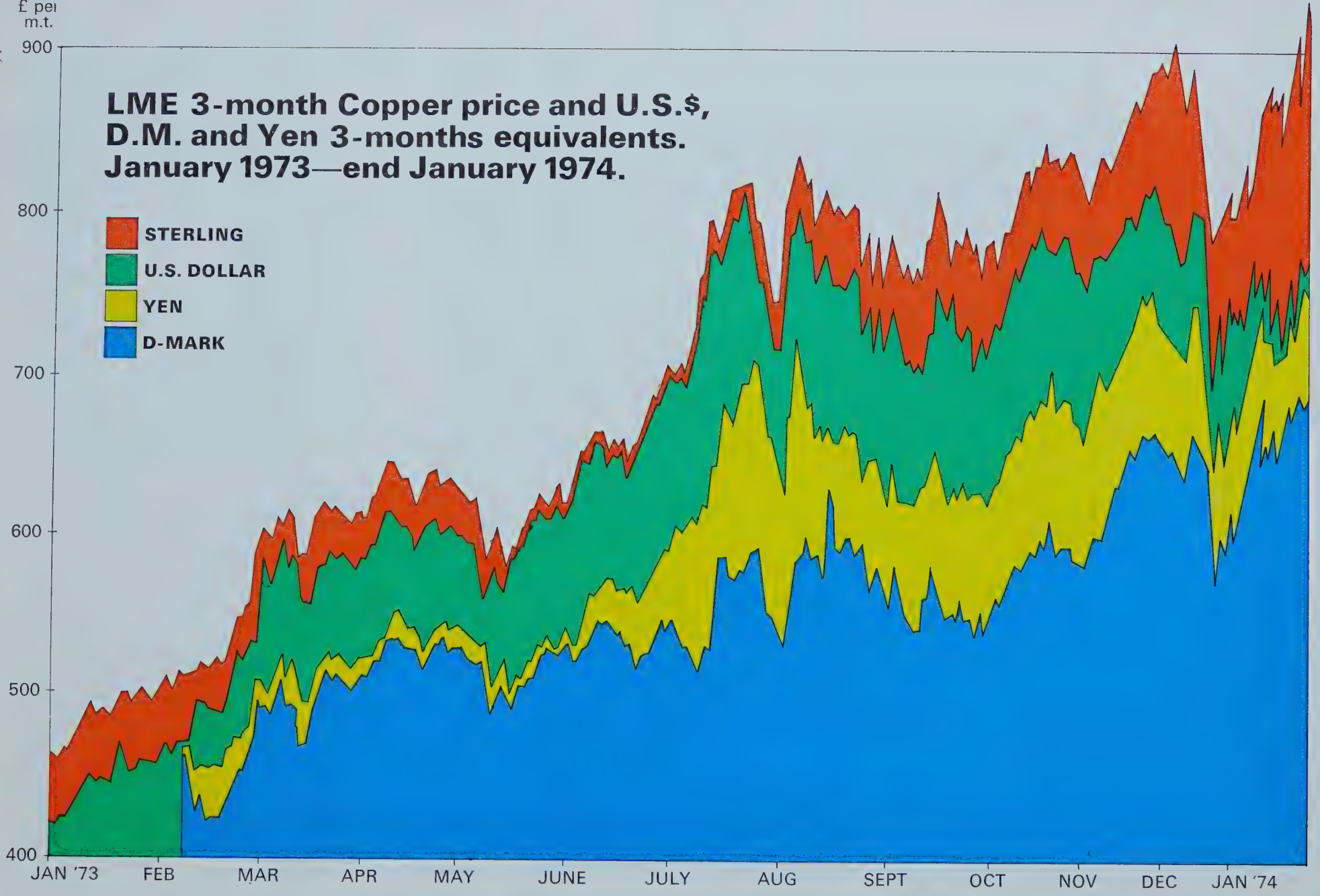
With so many disruptions free world mine production rose only by about 4 per cent to 7·34 million tons, and refined production by 3·5 per cent to 6·594 million tons, a shortfall on consumption of 500,000 tons; of which 140,000 tons was drawn from L.M.E. warehouses and over 100,000 tons was imported from Russia.

Unlike the aluminium and zinc industries, the U.S. stockpile was not a significant source of supply, though in February over 36,000 tons were released for use by the U.S. Mint. In December the Bill approving the disposal of a further 227,000 tons was signed by the President, a measure which had been widely forecast for some months.

Consumption

Consumption of refined copper in the free world increased by about 16 per cent in 1973 compared with 1972, to reach a new record level of 7·1 million tons. This is a direct result of the high level of economic growth especially investment growth experienced in all the main consuming countries, and particularly in Japan which managed an increase of 23 per cent. In many European countries such high levels of growth had not been achieved for many years.

In Europe the largest increase was in the E.E.C. countries, notably France and Belgium, which managed increases of about 19 per cent and 14 per cent, to 464,000 tons and 174,000 tons respectively. The U.K. increase was 9·5 per cent to 525,000 tons, Germany 8 per cent to 725,000 tons and Italy 7 per cent to 303,000 tons. For the U.K. this was the highest figure achieved since 1970. In non-E.E.C. countries, Spain and Sweden recorded the best gains—both somewhat higher than their larger copper consuming neighbours. Overall the most notable feature of European consumption is the growth rate of France which averaged 10 per cent per annum over the last five years and has cut the differential between U.K. and French consumption from 247,000 tons to about 110,000 tons.



Up to mid-February 1973 the U.S., German and Japanese prices moved in line. Following the February currency crisis the floating exchange rates caused the prices to move apart.
Base date for currency calculations 21 June 1972
Source: Amalgamated Metal Corporation.

Japanese consumption expanded in 1973 by some 23 per cent to over 1·1 million tons, a rate of increase more frequently experienced with aluminium. This performance occurred against a background of very rapid economic growth and expanding money supply. To meet it consumers had to import large quantities of metal at high prices. In the U.S.A. the continued growth in the economy managed to put consumption up by 9 per cent following the 11 per cent of the previous year, to over 2·2 million tons, twice the consumption figure of any other country. Towards the end of the year, fears began to increase that the strict monetary policy employed by Western governments would bring the growth rate to a very rapid end and replace it with a short but severe economic recession.

After the Middle East War, these fears were much stronger and the initial liquidation of stocks indicated that industry feared that consumption would be hit first. But the supply side will not be unaffected and depending on the long-term oil situation, supply might be affected more than consumption.

Sino-Soviet bloc countries increased their consumption by a small amount in 1973, and this reduced the world-wide increase to about 12 per cent.

Stocks

L.M.E. stocks at the beginning of the year were just below the peak of 190,000 tons reached in November 1972. Within a few weeks however, they were to drop sharply, often by 20,000 tons per week, as a result of heavy consumer buying particularly from China and Japan. Within five months the level had fallen from 180,000 tons to 60,000 tons. Thereafter the rate of decrease slowed and appeared to stabilise around about 40,000 tons, before the sharp drop in October and November to 17,650 tons. In December, the level rose quickly and year-end stocks were nearly 35,000 tons.

In America Comex stocks which had started the year at around 45,000 tons fell by year-end to 5,300 tons.

The Copper Institute in New York estimated that during the year U.S. domestic stocks of refined copper fell from about 130,000 tons at the beginning of the year to under 37,000 tons by the year-end, while stocks in other parts of the world fell from 326,000 tons to under 275,000 tons—a combined drop of almost 250,000 tons or nearly 45 per cent of the year's opening figure.

The U.S. national stockpile gained considerable importance during the year as a potential source of supply and rumours of impending releases circulated throughout the year. Towards the end of the year the American President signed a bill for the release of 228,000 tons.

Japan was the only major consuming country to maintain high stocks as a result of their buying in the first four months of the year. High interest rates and a depressed economic outlook caused some liquidation of these stocks towards the end of the year.

Outlook

Copper refined consumption is expected to show a small gain over the 1973 level though possibly Japan and the U.S.A. will experience a small decline. Production should increase in most countries, but attention during the first four months will be focused on the United States where the mine workers are negotiating new contracts. The current contract expires on 30th June.

Japan, Germany and the U.K. who consume about 30 per cent of refined production may hold the key for 1974. Japanese production and consumption will be reduced by the cut back in oil supplies to that country and by the general economic situation which seems much worse than for some years. Both European and Japanese consumption will be subject to the economic policies pursued by their governments in light of their enormous balance of payments deficits.

U.K. economic performance will suffer from the coal miners' strike and the three-day working week and the growth rate has fallen below government expectations. A continuation of industrial action by trade unionists will prevent the $3\frac{1}{2}$ per cent growth rate forecast for Phase 3 of the government's anti-inflationary measures being reached and as a result copper consumption may show only a very small growth or even an actual reduction.

If world economies show no combined growth demand would decline by about 4 to 5 per cent and inventories would increase by over 500,000 tons which could lead to a continuous decline in price in the second half of the year. We would not however, expect copper to trade below the £825–£850 range for any period of time, and the prospects in the short term for prices well above £900 for cash and three months remain good. The high level of stocks held in Japan may be a bearish factor on the market should consumption drop significantly from the current level of about 100,000 tons per month.

lead

Supply

Unlike zinc, lead production has not been heavily affected by refinery closures in the last three years, therefore the growth in consumption in 1973 did not have as serious an effect on the supply/demand balance. During the year, however, stocks were run down and the G.S.A. became an important factor on the supply side, selling about 240,000 tons compared with 45,000 tons in 1972.

The major disruptions to the supply scene during the year were the floods on the Missouri river during January and the month-long strike during the early summer at the Cominco mine in Buxby, Missouri. Kennecott and Amax also suffered from strike action and Britannia Lead had to declare *force majeure* in August following a strike. The nationwide rail strike in Canada had wide international effects and caused Cominco further trouble in late summer and the company had again to declare *force majeure*, though this was of short duration. Finally towards the end of the year strikes at Amax and Bunker Hill and rumoured production problems in the U.K. had a bullish effect on the market, though supplies were not seriously disrupted.

World mine production managed an increase from 3·54 to 3·61 million tons. Free world output was increased by about 50,000 tons, most of which came from the smaller producing countries. U.S.A. output fell by 25,000 tons to about 560,000 tons, while Australian and Canadian output remained fairly constant at around 400,000 tons each. Major European mine production remained fairly static. In Asia, Japan also was unable to better its performance of 1972.

Free world refined production rose about 7 per cent to 3·2 million tons compared with 1972, and achieved another new peak. The U.S.A.'s production topped 800,000 tons for the first time, maintaining the strong growth rate of previous years, while Japan pushed its output well above 225,000 tons, also for the first time. Given the strong European demand picture, refined production did not keep pace with only Germany, the U.K., Spain, and Yugoslavia managing an increase.

In line with expectations total world production, including the U.S.S.R., showed a significant increase of 270,000 tons to consolidate the rise to over 4 million tons recorded in the previous year. The final increase was in the order of 7·6 per cent.

Pollution problems which had been such an important factor in 1972 played a smaller part in 1973, as producers struggled to keep up with demand. Indeed the Canadian rail strike had a much greater effect on the market. Throughout the year the Cost of Living Council in the U.S.A. acted on the domestic price level in an effort to keep the price down for anti-inflationary purposes, while the combined effects of a scarcity of raw material for U.S. smelters and the critical power situation in the fourth quarter added to the tight supply situation in that country. This was made worse when U.S. producers sold part of their output on the international market to compensate for the higher free market lead price applicable to imported concentrates.

The U.S.S.R. remains a major producer, second only to the U.S.A., and during the year exports from the U.S.S.R. were about 115,000 tons nearly all of which went to Eastern European countries. Western producers also exported about 40,000 tons to these countries and with Chinese demand being met from the West there was a large movement of material to socialist countries.

Consumption

The steady increase in lead consumption over the last five years, continued in 1973 though at a faster rate. Preliminary 1973 figures suggest an increase of some 6·7 per cent compared with 3·7 per cent in 1972, and the final total may even be higher.

World lead consumption including the socialist countries rose to just over 4·3 million tons, producing a production deficit of about 90,000 tons before G.S.A. releases of around 240,000 tons.

The consumption of lead in anti-knock compounds both in the U.S.A. and Europe experienced a strong increase, as did the usage in batteries, both as a result of the high level of car production. However, during the year the regulation relating to the amount of lead in petrol put a temporary cloud over the market since lead consumption would be bound to suffer. These proposals were shelved in November and December in the U.K. and U.S.A. following introduction of the oil cutbacks, since the continued use of tetraethyl leaded petrol is a more economic way of using a scarce resource.

The other major consuming sector where lead has been losing ground to other materials is cable sheathing, and here also the oil cut-backs gave encouragement to lead producers, since plastic for insulation purposes became scarcer as the year progressed. In 1974 some cable manufacturers are considering the reintroduction of lead insulation, but it will take some months for them to adapt their manufacturing process.

Stocks

Stocks held in L.M.E. warehouses, which had started the year at 18,000 tons moved against the trend of other metals during the year reaching a peak of 37,000 tons in October before being reduced to 23,000 tons by year-end.

The G.S.A. released about 240,000 tons of material under the plan begun in 1972 for the disposal of 498,000 tons. Of the 240,000 tons about 75,000 tons were "off-the-shelf" sales, while the balance 165,000 tons were sold under contract to producers. About 220,000 tons are available for future disposal.

Outlook

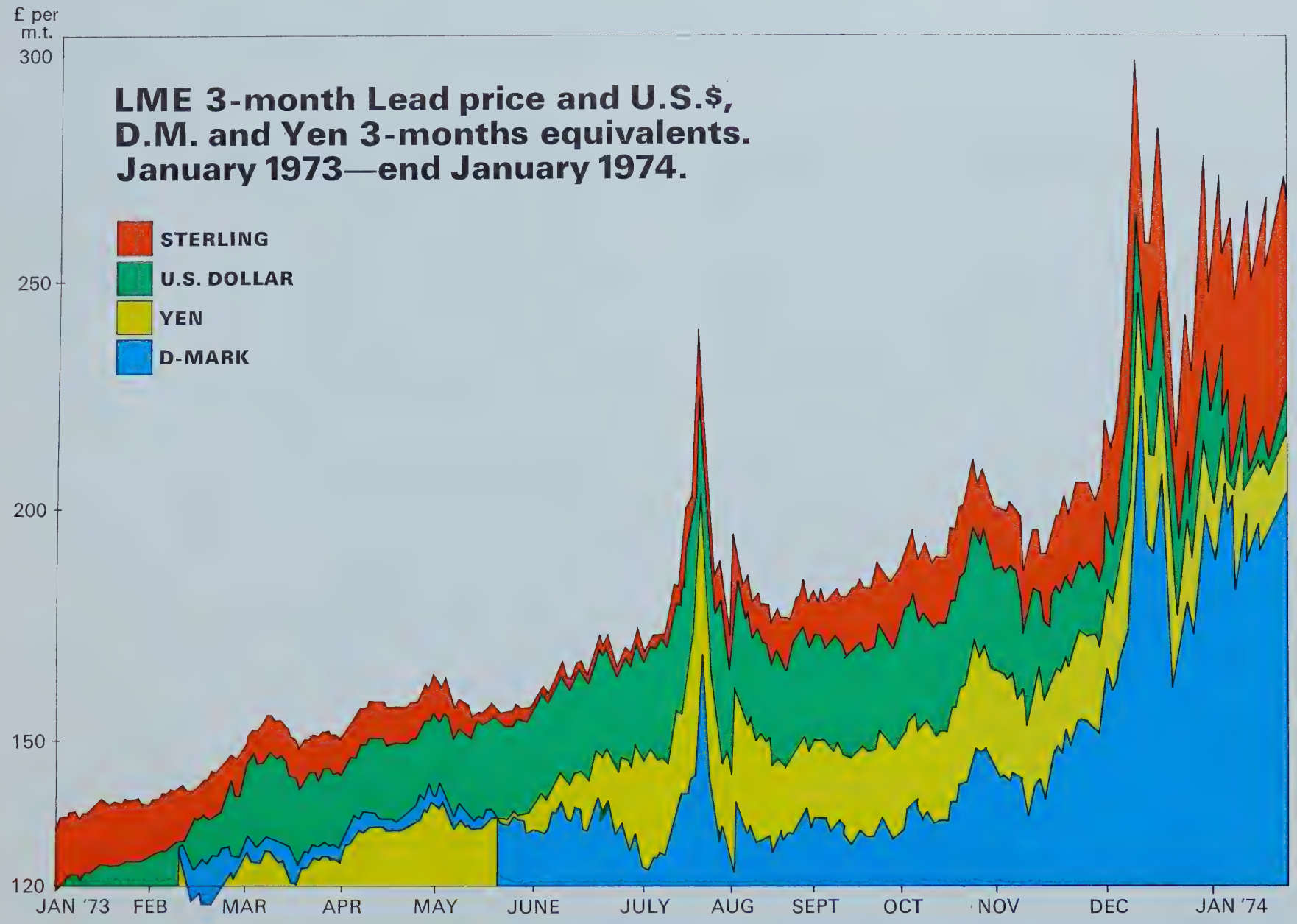
Lead faces an uncertain future in 1974 with consumption likely to be affected by the cutback in car production in the U.S.A., Japan and Europe. General Motors, the largest of America's car makers has recorded a 37 per cent drop in sales in the first ten days of January, and sales figures in the U.K. and Europe are showing similar though not such large decreases. A movement in the U.S.A. to smaller cars may, however, cushion the full effects of the drop in large car sales.

The outlook for lead usage in petrol is unclear at present, since higher petrol prices, the need for economy and shortages in supply of petrol, may discourage governments pressing for a rapid move to lead-free petrols which are somewhat less economic than leaded petrol.

A shortage of plastic and the steep price increase in aluminium may help the recovery of lead for electric cable sheathing. Aluminium has been gaining ground rapidly at lead's expense, but the higher prices of aluminium may cause its usage in cable sheathing to level off if not fall. At this time a change over to lead is only a possibility rather than a probability.

Lead production and consumption 1969 to 1973
Selected statistics. (000 m tons)

Mine production	1969	1970	1971	1972	1973 preliminary
Australia	452	457	399	400	400
Canada	289	353	358	377	400
West Germany	42	41	41	46	40
Ireland	59	63	52	60	60
Japan	64	64	71	64	60
Mexico	171	177	157	172	175
Morocco	77	76	79	86	95
Peru	155	155	176	189	190
South-West Africa	76	71	73	53	65
Spain	72	73	70	66	68
Sweden	78	77	78	74	80
United States	462	519	520	585	560
Yugoslavia	118	127	125	130	110
Other countries	295	302	313	317	367
Free world	2,410	2,555	2,512	2,619	2,670
Sino-Soviet bloc	853	872	894	918	940
World production	3,263	3,427	3,406	3,537	3,610
Refinery production					
Europe	1,212	1,239	1,181	1,201	1,250
Africa	137	143	132	121	120
America (excluding U.S.A.)	484	499	464	474	525
Asia	205	230	235	241	250
Australia	215	206	186	210	225
	2,252	2,317	2,198	2,247	2,370
United States	721	730	694	761	825
Sino-Soviet bloc	924	941	975	997	1,015
World production	3,897	3,988	3,867	4,005	4,210
Consumption of refined lead					
Europe	1,355	1,356	1,344	1,350	1,450
Africa	34	39	44	44	45
America (excluding U.S.A.)	251	230	240	248	307
Asia	262	296	291	338	400
Australasia	75	66	61	67	75
	1,977	1,987	1,980	2,047	2,277
United States	842	826	871	903	925
Sino-Soviet bloc	971	994	1,038	1,082	1,100
World consumption	3,790	3,807	3,889	4,032	4,302
Apparent surplus	107	181	22	—17	—92
Changes in U.S. stockpile	—11	—15	—8	—25	—225
L.M.E. average price (£ per ton):					
Cash	120·8	126·4	103·9	120·2	175·2
3 months	120·3	124·2	105·2	121·8	177·6



Up to mid-February 1973 the U.S., German and Japanese prices moved in line. Following the February currency crisis the floating exchange rates caused the prices to move apart.
Base date for currency calculations 21 June 1972.
Source: Amalgamated Metal Corporation.

tin

Supply

1973 opened on an uncertain note and prices fluctuated with the ebb and flow of rumours concerning the G.S.A. stockpile releases. It was not until June, however, that the G.S.A. disclosed its plan to sell 1,500 tons in the second half of that month and a further 5,000 tons in six-monthly stages from July to December.

I.T.C. reaction to the G.S.A. plan was to impose, against opposition from consumers, export quotas on the tin-producing nations of 35,040 tons between 18th January and 31st March and 42,644 tons in each of the following two quarters up to 30th September—2½ per cent less than the 1972 average quarterly level, in an effort to counteract G.S.A. releases. But almost coincidentally with the G.S.A. sales tin prices began their movement upward which was to take them to record levels in December and the reasons for this are as follows:

(A) The closure in June of Williams, Harvey, the largest tin smelter in the U.K. with an annual metal output of 14,000 tons and an important supplier to world and L.M.E. markets, caused a shortage of tin at a time when demand was rising. Moreover, picketing of the warehouse in Liverpool prevented the movement of tin from there to the consumers and this increased buying pressure on the Eastern market and caused the price there to rise very rapidly.

(B) The rise in prices in the East and the decline in B.S.M. stocks caused the I.T.C. in July to increase the level at which the B.S.M. could operate in the market. (Details of these changes are given below.) In September the I.T.C. had to withdraw authorisation for the B.S.M. to operate in the middle sector of the price range.

(C) Upsurge in buying demand. Following the initial sales of G.S.A. material and the strong level of demand the G.S.A. had to abandon its plan to sell 5,000 tons and by year-end 19,262 tons had been sold from the stockpile, from the authorised total of 48,897 tons. Much of the upsurge in demand came from Japan and may be of a stockpiling nature though the demand for tin-plate in the autumn was very strong indeed. Moreover, some consumer stocks of tin may need replacing having been depleted during the first half of the year.

(D) The export quotas imposed by the I.T.C. details of which are given above.

(E) Supply problems in Thailand towards the year-end due to oil shortages and latterly industrial disputes.

(F) The currency upheavals during which speculative interest may have used tin as a currency hedge and the devaluation of the U.S. dollar and sterling against the Malaysian dollar and European currencies.

Consumption

Free world consumption rose by some 13 per cent during the year to 213,000 million tons an increase of some 25,000 tons compared with 1972 with the largest increase being recorded by Europe (14,000 tons), and the U.S. (8,000 tons).

The very good harvests in Europe and North America were responsible for this improvement which came after some very depressed years when stocks had built up to record levels.

Consumption in Socialist countries is expected to be about 65,000 tons making the world total 278,000 tons.

Tin production and consumption 1969 to 1973
Selected statistics. (000 m tons)

Mine production	1969	1970	1971	1972	1973 preliminary
Australia	8	9	10	12	11
Bolivia	30	30	31	30	31
Indonesia	17	19	20	22	22
Malaysia	73	74	75	77	74
Nigeria	9	8	7	7	6
Thailand	21	22	22	22	23
Other countries	21	25	26	25	25
	179	187	191	195	192
Sino-Soviet bloc	49	50	36	36	50
World production	228	237	227	231	242
Smelter production					
Europe	45	43	38	38	39
Africa	12	12	11	10	10
America (including U.S.A.)	5	10	15	18	21
Asia	117	119	119	127	132
Australasia	4	5	6	7	8
	183	189	189	200	210
Sino-Soviet bloc	49	50	51	36	50
World production	232	239	240	236	260
Consumption					
Europe	67	68	69	71	85
Africa	3	3	3	3	3
America (excluding U.S.A.)	12	12	13	13	15
Asia	34	34	37	40	41
Australasia	4	4	4	4	4
	120	121	126	131	148
United States	59	54	53	57	65
Sino-Soviet bloc	60	61	62	30	65
World consumption	239	236	241	218	278
Apparent surplus	—7	3	—1	6	—18
Changes in U.S. stockpile	—2	—3	—1	0	—19
L.M.E. average prices (£ per ton):					
Cash	1,428	1,530	1,438	1,507	1,969
3 months	1,431	1,527	1,444	1,516	1,945

Price range in the tin agreements

At the September meeting of the International Tin Council the price range in the Tin Agreement was increased from the level fixed on 4th July, 1972. The price ranges are as follows: (prices in M $ per picul).

	Floor Price	Sector			Ceiling Price
		Lower	Middle	Upper	
4th July—21st September, 1973	583	583–633	633–668	668–718	718
21st September, 1973	635	635–675	675–720	720–760	760

Following the steep price rise in the second half of the year the I.T.C. at their September Meeting withdrew the authorization for the Buffer Stock Manager to operate in the middle sector of the price range. Subsequently on 14th November the B.S.M. was freed from selling tin at or above the upper selling price of M $760 per picul.

Stocks

Stock levels declined generally throughout the world during the year L.M.E. stocks, which opened the year at 6,850 tons fell to 4,000 tons by the end of September and to 2,500 tons by year-end. The increase in the rate of decline was accounted for by the drop in stocks in Liverpool warehouse of 3,225 tons following the closure of the Williams, Harvey smelter.

The I.T.C. buffer stock also declined very sharply from 12,500 tons in January to 4,820 tons at 30th September and was believed to be under 2,000 tons by year-end—the lowest figure since 1970. Sales from the G.S.A. stockpile for the year amounted to 19,262 tons of which 6,502 tons were sold during June/July, 4,035 tons during August and September, and 11,940 tons in the last quarter. Disposals under the AID programme were 344 tons.

In the first half-year the decline in stocks is thought to have taken place mainly among consumers, who expected to replace it with G.S.A. material. However, this did not happen and these stocks had to be replaced in the second half of the year by expensive material from G.S.A. and I.T.C. stocks.

Outlook

The G.S.A. will remain a very significant supplier of tin metal during 1974. Since 30,000 tons of tin are available for disposal under present legislation with a further 160,000 tons surplus to requirements and also available.

There will be a continued need for co-operation between the G.S.A. and the I.T.C. which in recent months has become powerless to influence the price but which needs to replenish its depleted stock. It is likely to be a net buyer on a major downturn in the market at or below its upper price range of M $760 per picul. However, since the beginning of 1974 the price of tin has moved sharply ahead to over M $1,100 per picul and the B.S.M. price range looks less realistic. The I.T.C. therefore is being strongly encouraged to raise its operating levels due to market forces and by the needs of the Malaysian tin producers who, have not yet fully benefited from the rise in world prices due to the revaluation of their currency. Increased operating costs in respect of higher energy and other material costs have put a further squeeze on their profit margins. Furthermore, developing countries faced with greatly increased oil costs will be anxious to obtain the maximum benefit for their output.

In the immediate future tin prices will continue to be dominated by the high level of demand and the continued currency situation and not least by pressure from producers for a higher I.T.C. price structure. 1974 prices may continue to rise to historically high levels and continue at such levels for the foreseeable future. Only an early return to a stable monetary system and a drop in consumption could bring a decline in price though not to the levels of the first half of 1973. It is more likely that prices will continue at current high levels if not higher.

Zinc production and consumption 1969 to 1973
Selected statistics. (000 m tons)

Mine production (recoverable zinc content)	1969	1970	1971	1972	1973 preliminary
Australia	435	415	380	430	458
Canada	1,096	1,136	1,141	1,138	1,350
West Germany	125	129	132	122	137
Ireland	86	85	78	95	70
Italy	118	98	96	103	80
Japan	242	252	264	281	250
Mexico	253	266	265	267	285
Peru	300	317	387	357	450
Spain	76	88	78	90	90
Sweden	81	80	87	110	120
United States	502	485	446	477	475
Yugoslavia	86	91	90	87	80
Zaire	86	103	98	99	95
Other countries	264	300	313	583	660
	3,750	3,845	3,855	4,239	4,600
Sino-Soviet bloc	1,065	1,095	1,180	1,247	1,350
World production	4,815	4,940	5,035	5,486	5,950
Production of slab zinc					
Europe	1,358	1,387	1,277	1,472	1,550
Africa	126	144	162	170	180
America (excluding U.S.A.)	602	610	560	684	750
Asia	741	702	751	845	875
Australasia	243	258	256	298	310
	3,070	3,101	3,006	3,469	3,665
United States	1,008	866	762	641	545
Sino-Soviet bloc	1,088	1,110	1,218	1,273	1,330
World production	5,166	5,077	4,986	5,383	5,540
Consumption of slab zinc					
Europe	1,556	1,528	1,491	1,665	1,800
Africa	56	67	68	81	85
America (excluding U.S.A.)	266	264	268	313	350
Asia	773	820	805	950	1,025
Australasia	115	114	116	125	125
	2,766	2,793	2,748	3,134	3,385
United States	1,236	1,074	1,135	1,286	1,450
Sino-Soviet bloc	982	1,046	1,124	1,192	1,150
World consumption	4,984	4,913	5,007	5,612	5,985
Apparent surplus	182	164	—21	—373	—445
Changes in U.S. stockpile	—16	—20	—2	—193	—253
L.M.E. average prices (£ per ton):					
Cash	121·1	123·1	126·7	150·9	348·1
3 months	122·5	122·5	128·1	154·1	332·3

zinc

Supply

Zinc mine production in 1973 reached about 5·95 million tons, an increase of 9 per cent over 1972, while slab zinc production rose by about 2·9 per cent to 5·54 million tons.

Free world mine output rose about 6 per cent to 4·6 million tons of which Canada (1·35 million tons), the U.S.A. (475,000 tons), Australia (458,000 tons) and Peru (450,000 tons) were the largest producers. Australian output is expected to continue to expand in 1974, and it should become the second largest producer following the continued drop in U.S. mine output from the 550,000 tons achieved in 1969. Japanese output is expected to increase following the discovery of new deposits in that country.

World wide slab zinc production rose by 2·9 per cent to 5·54 million tons while free world production rose by 2·4 per cent to 4·21 million tons from 4·11 million tons in 1972. Canadian output recorded the largest gain of 50,000 tons to about 520,000 tons following the increase in productive capacity in 1972. Belgium, Yugoslavia, Mexico and Peru among others also benefited from new output capacity. American output which had been reduced by about 50 per cent in the previous three years was further restricted by power shortages, and by the inability of producers to import high-priced concentrates since the domestic zinc price was controlled by the Cost of Living Council, and this added to the tight supply situation in the second half of the year. Elsewhere in North America, strike action by Canadian railway workers, energy supply problems, pollution controls and strikes at a number of smelters severely restricted output in the last quarter.

Drawings from the U.S. stockpile were an important source of supply throughout the year, with the final total being in the region of 250,000 tons, compared with 193,000 tons in 1972, and 300,000 tons earmarked for disposal in 1974.

In 1974, mine production should rise by over 8 per cent with the largest increases being recorded by Denmark (from the Cominco mine in Greenland), Canada, U.S.A., Australia and Peru. Metal production should increase by about 400,000 tons or 10 per cent as a result of new or increased capacity in the Netherlands, Yugoslavia, Mexico, Peru and Algeria.

Consumption

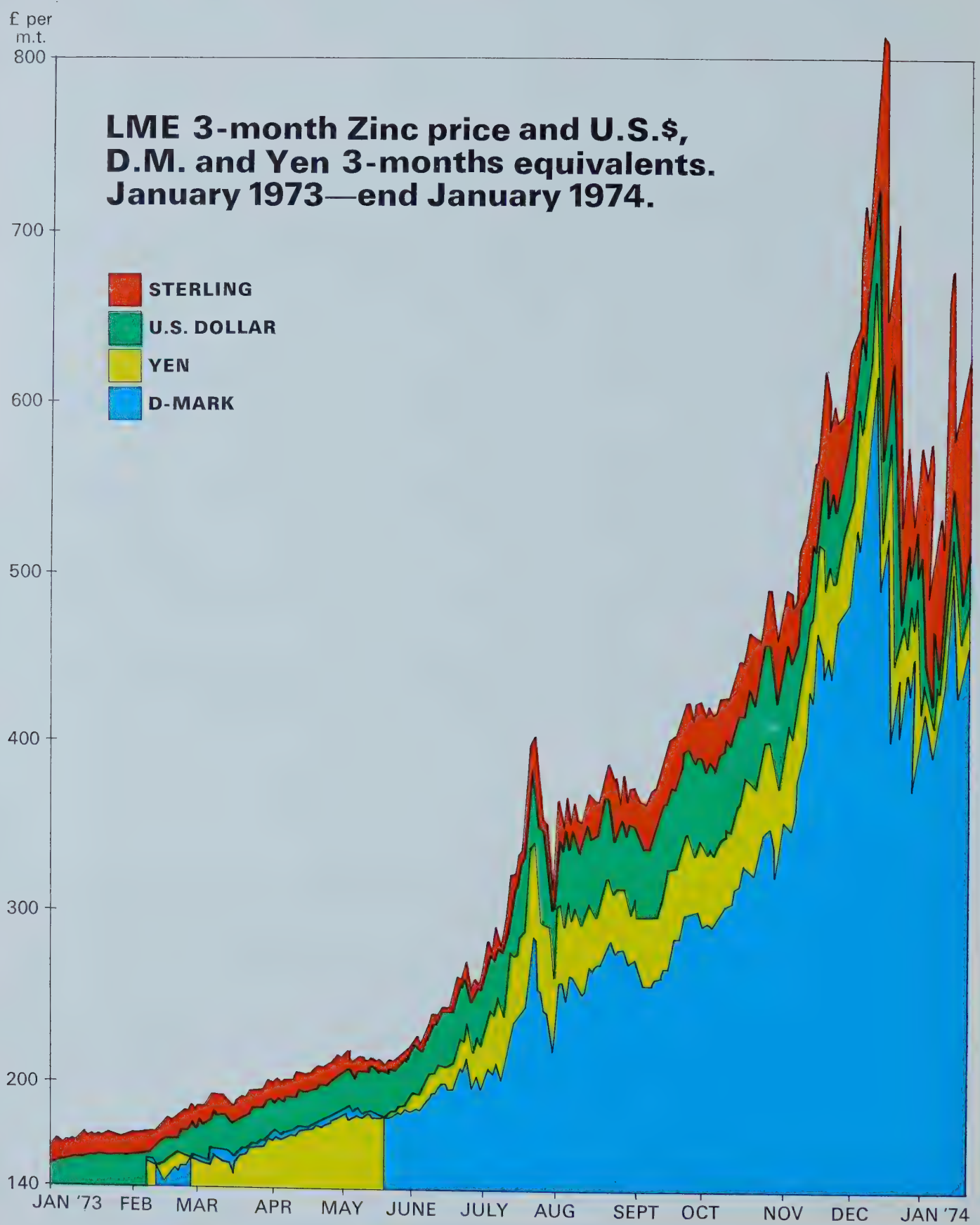
Slab zinc consumption rose by 10 per cent during the year to over 4·7 million tons, following the 11 per cent rise in 1972. American consumption rose by 12 per cent to 1·45 million tons while the European increase was in the order of 9 per cent, to total 1·8 million tons.

Drawings of 250,000 tons from the stockpile coupled with imports of 95,000 tons from socialist countries reduced the deficit of supply over demand from about 640,000 tons to about 295,000 tons.

Galvanizing remains one of the major end uses of zinc, accounting for about 40 per cent of consumption and with competing products such as aluminium and plastic being either in short supply or at very high prices the demand for zinc should be assured for the next few years, though zinc's own problems of supply and price could lead to major changes.

Stocks

L.M.E. stocks during the year declined from 34,000 tons to under 20,000 tons by mid-March and after being steady around mid-year fell sharply to under 5,000 tons by mid-December, before recovering at the year end to 8,000 tons.



Up to mid-February 1973 the U.S., German and Japanese prices moved in line. Following the February currency crisis the floating exchange rates caused the prices to move apart.
Base date for currency calculations 21 June 1972.
Source: Amalgamated Metal Corporation.

Stocks elsewhere have suffered similar falls, with the largest being that of the U.S.A. stockpile down 250,000 tons as a result of the "off-the-shelf" and long-term supply contracts with U.S. producers and consumers. As a result U.S. producers were able to maintain stocks at reasonable levels, the year-end figure being 29,000 tons, down only 3,000 tons from the January 1st level.

The International Lead and Zinc Study Group estimate that stocks between January and August fell 60,000 tons to 181,000 tons, the largest drop being in Europe, down from 111,000 tons to 67,000 tons a further large drop in the last four months is expected.

Outlook

Zinc consumption which is dominated by the galvanising and die-casting industries will be substantially affected by a drop in the automobile and construction industries. The increased awareness of the costs of corrosion should help it to maintain a steady growth rate.

In the exceptional circumstances of 1974 a decline in consumption of 2 to 3 per cent from the 1973 level of 4·835 million tons plus an increase in production of up to 10 per cent would significantly ease the supply deficit, provisionally estimated by the International Lead and Zinc study group at 190,000 tons, before G.S.A. releases. A 4·5 per cent reduction in consumption (assuming a 10 per cent increase in production) would cause the supply deficit to disappear, therefore any decline in consumption during 1974 could cause the price to decline from current levels. However, since production is concentrated in high energy consuming countries, cost inflation and supply short-falls could act together to keep prices at current high levels.

Silver production 1969 to 1973 (million ounces)

Silver content	1969	1970	1971	1972	1973 preliminary
Australia	23·7	25·2	21·2	20·8	22·0
Bolivia	5·8	5·8	5·4	4·5	5·0
Canada	42·1	42·8	44·6	45·4	46·0
Japan	10·5	10·7	11·2	9·7	10·2
Mexico	41·4	41·4	35·5	38·6	34·5
Peru	34·7	38·5	38·7	46·5	47·0
South Africa	3·2	3·4	3·2	3·1	3·5
Sweden	3·5	3·8	3·7	4·1	4·5
Yugoslavia	3·3	3·3	3·2	3·5	4·0
Other countries	30·2	28·1	31·1	32·9	34·0
	198·4	203·0	197·8	204·1	210·7
United States	40·5	43·5	40·2	36·2	38·0
Sino-Soviet bloc	45·8	46·4	47·0	48·4	49·0
World production	284·6	292·9	285·1	288·7	297·7

silver

Prices

Silver prices in 1973 have been dominated by the chaos in currency markets and the record levels to which gold rose. In the first weeks of the year, silver prices moved in a narrow range between 85 and 89 pence with each increase in price being met with profit-taking. The currency crisis in February caused heavy speculative interest in the market and prices moved up sharply during the month to over 102p before more stable conditions, large-scale profit-taking and plans to reduce the G.S.A. stockpile by 117 million ounces forced the price to under 90p. At these lower levels considerable consumer interest was evident from European countries, against revalued currencies. A short-lived decline in May took the three-month price down to 86·9p and thereafter short covering and speculative interest following a rise in the gold price took the price once again over 100p.

June prices opened strongly, in line with the rise in the gold price to record levels, and reached 108·2p for three months on the 5th but large-scale profit-taking pushed the price below 100p again. For the remainder of the month the market was extremely volatile with wide daily fluctuations and a price level around 105–106p was established towards the end of the month. This pattern was continued in July with large-scale speculative interest coming from the U.S. and though the currency situation was largely responsible, the strong upward trend in other commodities influenced the price rise which reached 120·6p on the 26th prior to profit-taking. The close relationship between gold and silver prices broke down during the month, with silver continuing to rise strongly after an easing in the gold price. The New York price also fluctuated widely and on several days traded at the permissible limits. In order to comply with the regulations of the Cost of Living Council, July and August contracts were traded on the Commodity Exchange in New York during the first two trading days of July only.

August prices reacted from previous highest levels and some consumer interest was noted on small declines. Bullish news relating to sharply increased consumption and demand from Canada failed to impress the market. Prices ended the month at around 110p three months. September prices regained much of the August drop on bullish news concerning currency movements and the stock declines since the beginning of the year. The high for the month was 118·8p on the 26th.

The Middle East War and its aftermath dominated the last quarter of the year and prices moved to new high levels of 123·7p on the 23rd for three months' silver. Subsequently an improvement in the Middle East caused some profit-taking and for some weeks the market traded around the 120p level. However, the oil shortage, the price increase, stock declines in London and New York, and renewed uncertainty in the currency markets caused a very strong price rise throughout the month of December with the three months' price reaching a record 145·8p on the 27th. With stock markets at depressed levels silver is becoming more interesting to speculators as a currency and inflation hedge.

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